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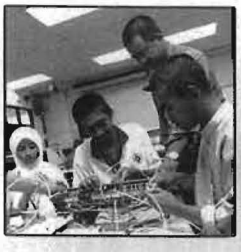
Balancing Teaching and Research in UNIMAS



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Everyone is invited to contribute articles, reviews, events and news on teaching-learning issues.
All contributions must be submitted to the Centre for Applied Learning and Multimedia(CALM), UNIMAS.

You can also access this newsletter online at: ***www.unimas.my/centres/calm/insite8***

introductory**notes**

Greetings from CALM

Traditionally, the nature of academic work in Malaysian universities is divided into two categories of teaching and research. Of these, teaching is the primary activity while research is seen the lesser important one. Malaysian universities were mainly established to impart knowledge and skills and produce graduates who can contribute to the advancement of the society.

Since the 1980s and up to the present, there have been wide ranging changes in the society which has created impacts in higher education such as: role of university in the development of the nation and its citizens, allocation of budgets given to education and accountability demanded from it, impact of information technologies, transformation in teaching and learning, changes in the status of several institutions within the higher education sectors, and increasing knowledge-based economy. What's more, the pressure the stakeholders have been putting on universities to achieve world recognition or aim to become 'world class' through high quality teaching-learning environment and ground-breaking research programs. How have the universities responded to these changes? How have the changes affected the nature of academic work, i.e., teaching and research in the universities?

In UNIMAS, I believe that we have started to see the effects of these changes. From the very beginning, UNIMAS has always been committed to strengthening the quality of teaching-learning environment through several initiatives. It established the Centre for Applied Learning and Multimedia (CALM) to serve as the vehicle to achieve quality teaching among its academics. CALM's Postgraduate Diploma in Teaching and Learning Programme, Strategic Course Design and Management workshop, Academic Quality Assurance workshop, e-Learning training as well as its other professional development programmes are proofs that UNIMAS has responded to the aforementioned changes.

Besides assuring quality in its teaching and learning environment, its other equally important function has never been neglected. The promotion of research culture among its staff has been one of the goals of UNIMAS. It has three research institutes (Institute of Biodiversity and Environmental Conservation, Institute of Health and Community Medicine and Institute of East Asian Studies), and two centres of excellence (Malaria Research Centre and Centre for Water Research) devoted to R&D. It recently set up the Research and Innovation Management Centre (RMIC) to oversee the management of research and research output in UNIMAS. To date, its commitment to research has yielded numerous awards (e.g., e-Bario and eco-ceramic projects), publications in prestigious journals, contract research grants (e.g., peat, sago, and epidemiological studies) as well as consultancy works (e.g., Environmental Impact Assessment).

Granted that teaching and research are central to the very existence of the university, these two should not be opposed to each other but instead complementary. That as knowledge is generated; it requires that it be passed on. However, some academics feel strongly about the problems caused by wishing to do research and being required to teach. Many academics would like to conduct research and produce new knowledge, but at the same time teaching is often felt as a duty that hinders their research activities. Hence, the main challenge facing university administrators and the academics is finding a way to make the relationship between teaching and research a fruitful and complementary one.

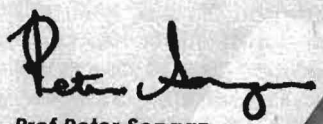
'Balancing Teaching and Research' in UNIMAS' is the theme of this issue of **Insight**. To open the discussion of the theme, **Insight's** Rozita Nawi sat down with Prof. Murtedza Mohamed, Deputy Vice Chancellor (Research & Innovation) to discuss salient features and issues of research governance in UNIMAS. He also reveals his aspirations with regards to research and innovation in UNIMAS.

Following it up, **Insight** invited three articulate and insightful members of our academic staff to give their views and analysis on this topic of teaching and research in UNIMAS. In his article "Promoting Research and Teaching in the University: A Balancing Act", Dr. William Lim shares the problems faced by academics and university administrators in trying to balance teaching and research. His analysis of the problems leads him to conclude that management of human resources may be the answer to balance teaching and research.

On the other hand, Dr. Edmund Sim states in his article "Making Research and Teaching Work Together in the University", that for a university to attain success and world class status, it should consistently be producing quality and quantity research as well as knowledge-competent graduates. He sees research complementing teaching as a formula for success in the university. He cites several factors that the university management should contribute to the 'research plus teaching' equation.

Dr. Ong Puay Hoon's article "Teaching, Research and Service Activities at the Faculty of Medicine and Health Sciences (FMHS): A State of Dynamic Flux" is an eye-opener for many of us. For most of us who are faced with problems in trying to balance teaching and research, FHMS academics has another agenda, i.e., service. She looks at teaching, research and service as the 'triad' in dynamic flux.

I know that this topic of teaching and research will continue to generate lots of discussions among us, and that is good, for it will make us aware on how we can fruitfully consolidate these two in our daily work as academics.



Prof Peter Songan
Dean, CALM

Research Governance in UNIMAS

text • inspiration
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Professor Murtedza Mohamed was recently appointed as the Deputy Vice Chancellor (Research and Innovation) at UNIMAS. Prior to this appointment, he has been the director of the Centre for Technology Transfer & Consultancy (CTTC), dean of the Faculty of Resource Science & Technology (FRST) and director of the Research, Innovation and Management Centre (RIMC). He has always been active in research, having led numerous projects with funds from local and international agencies as well as consultancy works for the government and the private sectors. Indeed, Prof. Murtedza is at the forefront in the development of research culture at UNIMAS. **Insight's** Rozita Nawi has had the opportunity to interview him on his views about governance of research in UNIMAS. Below is the full text of the interview.

Q: Could you describe your current portfolio as the Deputy Vice Chancellor (Research & Innovation) of the university?

A: The portfolio for DVC for research in many public universities in Malaysia has in the past included overseeing physical development on campus. Last year, the Ministry of Higher Education (MoHE) revised the functions of this portfolio, taking into consideration the need to give stronger emphasis on applied research that can directly contribute to the well-being and wealth of the nation. The 'reformatted' portfolio, applicable to all IPTAs in the country, is called DVC (Research & Innovation). Development affairs are now placed directly under the care of Vice Chancellors. The principal responsibilities of DVC (R&I) as decided by MoHE include the following:

:: Plan, promote, implement and manage research programmes at the university

:: Implement strategies that can enhance the competence of academic staff in doing research and presenting the research outputs meaningfully

:: Promote applied/market oriented research and identify outputs that can eventually be commercialised

:: Promote consultancy services and marketable educational and training packages (in the context of knowledge and technology transfer) to the public and private sectors

At UNIMAS, specific portfolios entrusted upon me by the Vice Chancellor are overseeing:

:: the management of research and innovation, conferences and academic publications, with the Research & Innovation Management Centre (RIMC) as the secretariat;

:: the management of academic and research information resources made available through our Centre for Academic Information Services (CAIS); and

:: the management of campus net working and provision of ICT facilities and needs of faculties, students, finance, research, academic and human resource divisions. These services are offered through the Centre for Information and Communication Technology Services (CICTS) and Centre for Applied Learning & Multimedia (CALM).

Q: Briefly, what has UNIMAS achieved in research to date?

A: Like most comprehensive universities worldwide, and starting from "zero," our initial years had been focused largely on teaching and learning. Our young academics were then busy with curriculum design, courseware development, etc. that deprived them of adequate time for doing serious research. During the last six or seven years, however, we have started seeing spikes of excellence in R&D at UNIMAS, as indicated through publications in highly reputed journals (e.g., The Lancet), and awards for utility innovations (e.g., the e-Bario Project) and industrial design (e.g., the eco-ceramic project) at both national and international levels.

As of 2005, the number of research projects undertaken at UNIMAS stood at 599, 55% of which were in natural and applied sciences, 19% in technology and engineering and 26% in social science and humanities; outputs included 830 publications (2001 - 2005). These projects were funded by a total budget of RM51.4 million, secured through the regular government funding sources (61%) as well as from private sources, corporate sectors and international funding agencies (39%). These included endowments for eight Research Chairs, which in itself were reflective of the strength of UNIMAS in R&D.

Today, our strength is being acknowledged by peers in at least three niche areas of research, that is:

:: **Biotechnological research in epidemiology (dengue, JE, FMHD, malaria), biogeography (phylogenetics) and agriculture (sago)**

:: **ICT, specifically on rural communication and image analysis**

:: **Biodiversity, natural resource and environmental management**

Although UNIMAS has managed to secure only two patents to date, award-winning utility innovations and industrial designs are numerous. In recognition of their strength in research, the university management has recently upgraded the status of two groups of researchers at UNIMAS to Centres of Excellence; they are Malaria Research Centre and Centre for Water Research.

Q: Research productivity and teaching effectiveness shed light on the long-debated question of whether performance in one area enhances performance in the other. Could you comment on this statement?

A: In academic world, the complementary functions of teaching and research have long been acknowledged. Prominent scholars, locally and internationally, are known to be strong and excel in both. A devoted scholar will always find it satisfying and accomplished when they get to use their own case studies to support their lectures. The rationale for academics to be actively involved in research includes the following:

:: Promoting the significance of innovative learning through research as part of staff and student skills and intellectual development

:: Accumulating and synthesising results of learning process, research findings and practical experience into the pool of dynamic or progressive knowledge contents

:: Integration of up to date knowledge and methodology to teaching and training curriculum

:: Making available the process and outcomes of research findings to relevant stakeholders and the world

Having said that, the question of whether the performance in one enhances the other should not really be looked upon as a contentious issue. Instead, I believe in looking at these two as a package. For tertiary education (unlike at school level) this package is an imperative. As scholars, we have to be busy with both; and one of the basic requisites for this package is that we have to stay at the frontier of knowledge and remain current at all times through constant reading and publishing in our respective disciplines.

There are of course various different factors that govern the productivity of research and the effectiveness of teaching; but the irony is while others are forever disgruntled by constraints, dedicated scholars continue to perform and excel under the same limitations.

Q: In your opinion, what are the challenges that academics have to face when they have to juggle their research work with their teaching tasks?

A: This is very much related to your earlier question. But, I believe that the difficulty of having to juggle up time for teaching and research are very much the predicament amongst new lecturers and those having to teach new courses. Yes, it is understandable that this category of people will have to spend more time to develop quality courseware; meaning, during that period they will have less time to work on their research interests. That is exactly the reason why research at UNIMAS only began to accelerate during the last 5 years.

I guess the crux of the matter here are passion for knowledge and research, and good time management, which develops into routines of scholarly culture. Going by the present quality code of practice, the academic load of lecturers are more or less pre-determined. If I were to paint a scenario of typical daily routines expected of us, I would see the following: one to two hours of lectures and tutorials in the morning, browsing through the latest edition of journal papers/publications before lunch, attending research colloquium or academic discourse during lunch or early afternoon, supervision of research students thereafter, allocating also time for academic writing, fieldwork and/or consultancy work one day in a week.

Q: The University has set up the Research and Innovation Management Centre (RIMC). What is the role of the RIMC? What initiatives will this centre launch in order to encourage research and innovation in the university?

A: The RIMC is part of the research governance structure at UNIMAS. Basically, RIMC is responsible for overseeing the management of research and research output in this university. Specifically, the tasks of the RIMC are to:

:: serve as the administrative secretariat to the:

- o UNIMAS Research and Services Committee
- o UNIMAS Academic Publication Committee
- o Research Expert Panels (tasked with scrutinizing and recommending support for research proposals on the basis of merit, timeliness, relevance and excellence)
- o Research Chair Steering Committees
- o UNIMAS Conference Committee

:: develop and maintain a research database and financial management system for research projects carried out in UNIMAS; and

:: promote development, patenting, exploitation and commercialisation of research and innovative outputs by UNIMAS researchers.

Q: In recent years, our lecturers have been winning awards for their research works, doing our university proud. Will the university be creating more opportunities for our lecturers to showcase their research work in order to gain recognition in the international scene?

A: Certainly, we shall continue to aggressively promote and project quality research findings, through mass media and exhibitions, both locally and internationally. This endeavour is certainly beneficial at least in terms of increasing our visibility (make people aware of our existence and competence), attracting research funding, and alluring researchers and new students. It has been decided by the University Senate and Deans Council that UNIMAS will continue to make available the necessary funds to support our participation in local and international expositions.

Q: What are your aspirations for the next 5 to 10 years especially in the context of enhancing research and innovation in the university?

A: Very simple, all our stakeholders will be happy if we manage to thread well along the universally accepted performance indices.
For a university to be considered as excellent in research the key performance indicators include:

:: Number and quality of active researchers (rated by the number of years of research experience)

:: Number of registered research projects

:: Number of supporting research personnel (post-doctorates, research fellows and post-graduate research students)

:: Number and quality of research output: patents, products, books, refereed journals, awards/recognitions, policy papers etc.

:: Number of centre of excellence, quantum of research grants received (local, international), budget allocation for research, research facilities/equipment, research information support system

:: Networking - locally and internationally

Specifically for UNIMAS, and in the present context of stakeholders' expectations, the minimum targets we should all try to achieve are:

:: Immediate: Every academic staff has a research grant, with at least 40% of them involved as principle investigators

:: Within 3 years: Every academic staff feels comfortable submitting research papers to refereed/cited journals, nationally and internationally; and UNIMAS receives 25 awards and recognition per year

:: Within 5 - 10 years: Every academic staff secures at least RM30,000 of research grant/year, with 50% of the total grants come from international or private sector funding sources. Each academic staff should be supervising at least 2 post graduate students and submitting 2 papers in national/international refereed journals per year. In terms of innovation we should try to come up with least 15 IPR protected output per year that can either be patented, commercialised, or copyrighted (including original writings).

text • inspiration
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Promoting Research and Teaching in the University: A Balancing Act

At the recent Research Awards night where thirty or so lecturers from different faculties assembled, the topics of conversation were innovation, commercialisation and new knowledge. No one was talking about teaching-learning or lectures or tutorials. Someone once told me that if all we wanted to do was teach, we should join a secondary school. Academicians do not just impart textbook knowledge - they generate new knowledge. Public universities receive government funds to search for answers to the country's challenges, to understand the world better and to increase the people's quality of life. Where the university aspires international recognition, it needs to be doing cutting edge research that pushes back the frontiers of knowledge. For a state public university, research is not a nice-to-have, but part and parcel of its very reason for existence.

At the same time, the reality for universities in emerging nations is that they are mainly established for producing skilled manpower. The number of public universities in Malaysia has risen from 1 in 1965 to 18 today.

Correspondingly, the proportion of the labour force having tertiary education increased from 9 percent in 1990 to 17 percent in 2003, with the eventual target of 40 percent by 2010[1]. Researchers and engineers, who now number 15 for every 10,000 workers are targeted to increase by five-fold to reach 75 per 10,000 workers in 2010[2]. These people do not become engineers by doing research. They come to us as undergraduates needing to be taught. Perhaps that is why we call our academic staff 'lecturers' rather than researchers. While the same cannot be said for research, it is fair to surmise that all academic staff to differing degrees is involved in teaching.

If universities are to be doing both research and teaching, then it goes without saying that each university will be confronted with a delicate balancing act. While that will be the challenge for every university's administrators, the picture for the individual academic staff is very different indeed. Careful observation will bear out the fact that while all academic staff are allocated teaching tasks, only a minority apply for

1 Malaysia Third Outline Perspective Plan, 2001-2010
2 Malaysia Third Outline Perspective Plan, 2001-2010, op cit.

grants to do research. Among those who successfully obtain university grants, a few of them are yet to submit evidence of progress, while at the extreme end, some grant money even remained untouched. Hence, the challenge of balancing both research and teaching is at times more accurate to be re-stated as 'how to nurture research while doing teaching?'

It is noteworthy that the research component allocated in the current promotion guidelines starts at a low level for Senior Lecturer, is increased for Associate Professor and highest for Professor. This is consistent with a junior academic starting off with a small research grant, then progressing to a bigger grant with more students and finally ending their career with an established laboratory and reputation. Several factors may disrupt this sequence. First, there is staff turnover. Also, contract staff may not stay long enough to follow through a project. Second, after excluding the aforementioned, for multiple reasons still not all academic staff will choose to pursue research. Since the country does not have a surplus of potential academics, we do not have the luxury of selecting only research-ready applicants to increase the research pool. Third, some who attempt research do not go far due to lack of ability to function as independent investigators, at least investigators that contribute novel significant findings. We spend a lot on trainee lecturers but lack a mechanism to ensure that they obtain the kind of training that will enable them to drive their own research when they return. Assuming of course, their field is even possible to do here. Senior mentors could have a role here but their numbers are few, for the reasons mentioned. It is interesting that for biomedical research in the US, researchers spend 3 to 6 years in postdoctoral training under an established scientist before they enter academia. Over here, our staff face the prospect whereby their best or most productive research was the one they did before their graduation.

These facts lead us to focus on the final group - the academics who are adequately trained to conduct independent research, while possessing the determination and passion to pursue research alongside teaching. Although helping the university tip the balance towards research, they do so under considerable difficulties. For those who run projects with large grants, what they report on their SKT forms is one line stating the name of the grant. In truth, holding of that grant has made them not just scientists but also laboratory workers, inventory controllers, accountants, writers and human resource managers. Despite these additional time demands, they are allocated the same amount of teaching as any other staff. Indeed, they are often reminded that teaching and administration duties are the prerequisite for promotion. Under these circumstances, even the ablest of researchers may be tempted to slow down on research, or even give it up altogether.

Hence, the university's effort to balance teaching and research may ultimately come down to management of human resources. Following the 20/80 rule, if 20 percent of the staff is contributing to 80 percent of the research output, the logical approach to tip the balance towards research is to nurture that 20 percent who contributes to it. Faculty administrators may need a paradigm shift in terms of allocation of teaching and administration duties, where one looks at the overall contribution rather than the same mix of duties for every staff. It may be that the staff needs to be divided into research-intensive or teaching-intensive groups, with different ratios of work allocation given to both groups. Within each group the criteria for excellence can be spelt out in specific terms, with target indicators in teaching such as content and communication skills, and the other, research indicators like grants, publications and citations.

Public universities are required to produce skilled manpower while generating useful research. The balance required can be achieved by maximizing the contribution of the human resources best suited for the task. Such strategic deployment may be instrumental to harness the country's universities in the push towards k-economy and developed nation status.

Faculty administrators may need a paradigm shift in terms of allocation of teaching and administration duties, where one looks at the overall contribution rather the same mix of duties for every staff

Making Research and Teaching Work Together in the University

text • inspiration
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"I have no time for research because I am overloaded with teaching duties!"

Do you find yourselves making the above statement from time to time? Are you in a dilemma when it comes to whether you should be a researcher first and then a lecturer, or vice versa? If so, you are not alone. All academics in tertiary institutions are affected by the problem of balancing between research and teaching.

In most Malaysian public tertiary institutions, research activities are highly encouraged. And, refereed publications of articles and books are still the yardstick for promotion to academic posts of Senior Lecturer, Associate Professor and Professor. Teaching is only considered a fulfilment of core academic duty.

The dilemma surfaces when academics find themselves spending too much time in teaching thus neglecting research. Sadly, teaching alone does not provide the "brownie points" for promotion. This is because it is often difficult to properly define good and bad teaching. Compounding this problem further, lecturers can be sacked for not teaching, but never on grounds of not doing any research.

For the average lecturer, it is much easier to give higher priority to teaching than research. After all, it is better to save the job and worry about promotion later. The corrupt few might even believe that connection and public relation skills could take care of the latter.

Careful thinking would tell you that by sacrificing research for the sake of teaching you would be doing a great disservice to what academia stands for. The long term effects of not building the frontier of knowledge will inextricably put the art of lectureship into jeopardy.

How then should we address this rather perplexing problem of juggling between research and teaching in university? Carpenter (2003) is of the opinion that most of the successful and distinguished scholars and researchers are also excellent teachers. He further states that, "the figure of the stellar scholar who is hopelessly incompetent is largely mythic". This means that one cannot succeed in teaching unless one is apt in research first. It brings across the idea that the problem is not one of teaching versus research but more of the relationship between the two.

In my personal experience as a UNIMAS lecturer, and also having observed my colleagues during their teaching practice, I have also arrived at the same conclusion as Carpenter. Those who are good in research teach well - pedagogical skill correlates positively with calibre in research.

Since research directly influence teaching skill, it would be logical for university management to support research work in full. Lecturers should complement this support by having the intrinsic desire and passion for research - using the knowledge from research as substance in their teaching. The responsibility to make this equation of 'research plus teaching' work rests on the shoulders of both the university management and the academics.

Now, to model the equation so that it is workable, the non-variable factors should start with lecturers who take research seriously and explore how research knowledge can be linked to undergraduate teaching. When this is established, university management should contribute the following factors:

1. A flexible method of student learning assessment that is not continuous and exhaustive to the lecturers. Single semester exams and assignment as option should be optimal. This allows lecturers to spend quality time on their research.

2. Appointment to faculty management positions should take into consideration the track record in research activities. It is often difficult for faculty management to encourage, recognise and reward faculty members for research work if they (deans, deputy deans and department heads) are not research-minded.

3. Employment of academics on the basis of their research capability. A sure way is to the consider those who have gained their Ph.D qualification via full-time research.

Notwithstanding infrastructural limitation, universities are often ranked on the basis of quality and quantity of research outputs. Universities can also be accorded 'world class' status if they consistently produce knowledge-competent graduates. Therefore, as universities compete for recognition, faculties should be active in research and able to use the knowledge gained as the backbone for quality teaching. I see the arrangement of research to complement teaching as a formula for success in any university. Do you see it that way too?

Reference:
Carpenter, L. (2003). Teaching versus Research: Does it have to be that way?
URL: http://www.emory.edu/ACAD_EXCHANGE/2003/sept/carpenter.html.Retrieved on 9 February 2006.

Teaching, Research and Service Activities at the Faculty of Medicine and Health Sciences (FHMS), UNIMAS: A State of Dynamic Flux

text • inspiration
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The mission of the Faculty of Medicine and Health Sciences (FMHS) at UNIMAS is education, that is, to produce a dedicated workforce for the health care services of the nation. The undergraduate medical curriculum has, as its general objective, the provision of a sound medical education to produce safe, competent and accountable "generalist" medical practitioners for the country. To achieve this objective, the Faculty has become a complex organisation that integrates teaching, research and the practice of medicine. Hence, the activities of academic members of FMHS can be divided into these three partially-overlapping categories of teaching, research/scholarly activity and service.

Teaching as a Core Business

As the university is a seat of knowledge, the Faculty assigns a high priority to the pursuit and dissemination of knowledge. One of the primary goals of the Faculty is the education and training of learners at both the undergraduate and postgraduate levels. Faculty staff must not only impart knowledge, information and skills needed for competent medical or nursing practice, but must also serve as models to students under different professional settings. Although educational roles vary considerably from person to person, it is expected that all faculty members are to be active and effective teachers. No matter how a faculty member's time is divided, the overall effort must produce tangible evidence of intellectual growth and scholarship among the learners. Creative activity in the design, development, and implementation of both undergraduate medical or nursing and postgraduate curricula is recognised as a highly desirable faculty activity. Besides traditional teaching in lecture rooms and laboratories and facilitation of problem-based learning sessions, clinical education of medical and nursing students is mandatory and takes place in hospitals and their clinics, emergency rooms, operation theatres, mortuaries, chronic care facilities, hospices, nursing homes and private practices. These centres are

Creative activity in the design, development, and implementation of both undergraduate medical or nursing and postgraduate curricula is recognised as a highly desirable faculty activity

essential "classrooms" for medical and nursing students as they are providers of primary care and routine patient services, as well as centres for experimental, innovative and technically sophisticated services.

Research as a Major Agenda

As there is a critical need for research-based information to improve the quality of medical and health education, the pursuit and dissemination of new knowledge through excellence in research is a major agenda in the Faculty. As universities are in part research institutions, many of the advances started in research laboratories of medical schools are incorporated into patient care through clinical research programs at clinical facilities. Today's research contributes to the development of the medicine of tomorrow.

Today's research contributes to the development of the medicine of tomorrow

The type of research/scholarly activity expected of a faculty member in large part will be determined by the member's defined role within her/his department. Faculty members in Basic Sciences and Para-Clinical departments and some faculty members in clinical departments would normally be expected to conduct and publish results of their laboratory-based research. Other faculty members in clinical departments have different roles. Some have major role as clinical investigators while others may be primarily clinicians /teachers. Whatever their roles, all are expected to show tangible evidence of research/scholarly activity and would normally be expected to conduct and communicate the results of clinically based research/scholarly activity, which includes but is not limited to, clinical investigations, case studies, consultative projects, innovations in diagnosis and treatment, medical prototypes of devices or products, studies of health care delivery, innovations in medical education, and integrative reviews or translations of biomedical topics.

Service as an Important Agenda

Faculty members participate in a variety of functions. The components of their service include:

1. Patient Care and Clinical Practice: Includes professional services to the community, whether assigned or voluntary

2. Professional Activities: Local and national professional society membership and leadership, editorial contributions, manuscript reviews, membership on editorial boards, special assignments to nationally- sponsored studies or task forces, membership on certification/ licensure/specialty/advisory boards, membership on accreditation committees, membership on grant and journal reviewing panels, and membership as external examiners to other public and private medical schools

3. Administrative Activities: Appointment to positions of responsibility in the primary department, faculty, or university, including student welfare and mentoring roles

4. Community Activities: Consultation activities and guidance of community health projects, participation in health care planning programs--local, state, national or international, work with governmental agencies and the legislature, participation in programs of public education, membership or committee work on boards of public and private health organizations agencies and NGOs

5. Participation in continuing medical education programs

The 'Triad' in Dynamic Flux

Much of the strength of the Faculty lies in its diversity. With eight departments (Basic Medical Sciences, Para-Clinical Sciences, Surgery, Medicine, Orthopaedics, Obstetrics and Gynaecology, Community Medicine and Public Health, Paediatrics & Child Health), one nursing programme, a medical

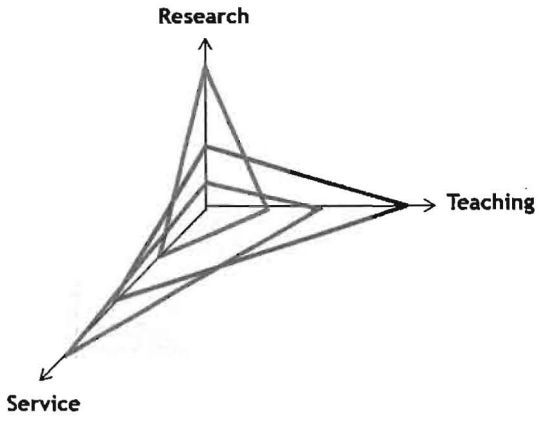

Figure 1: Diverse contributions of Faculty members in teaching, research and service.

education unit and a Centre of Excellence for Malaria Research, the contributions of faculty members are indeed diverse. Individual faculty members vary widely in the distribution of their efforts among the 'triad' parameters of teaching, research and service.

Faculty members who have extensive teaching and clinical obligations may find little time to boost their research productivity (see blue line in Figure 1). Those with extensive administrative duties and tasks find it tough going to juggle those with teaching and research (see green line in Figure 1). The red line shows the distribution of time for active researchers who have minimum teaching and administrative roles.

Conclusion

The role of the medical educator in UNIMAS is often seen as a thankless one, with all the pressure of teaching conflicting with clinical, research and administrative responsibilities. The common grouse is that of the 'publish or perish' mantra - which promotions, large salaries and prestige are normally awarded for research, publications, patents and grant funds.

Although good teaching may be appreciated, good research is still at the heart of the reward structure in the Faculty and University. Great teachers who are only adequate researchers find themselves tenuously balanced on the cuff of the Faculty while those who publish in the right academic journals get immediate recognition and reward. Although research in the Faculty is important, it cannot exist without the students. In keeping sight with the mission of the Faculty and without losing sight of the importance of research, there have been earnest calls for the quality of teaching to be given a bigger part in the promotion process.

Staff enrolment with regards to appointmets as trainee, contract or full-time lecturers, differs for different departments in the Faculty. A unit/department not seen as 'glamorous' or whose clinical discipline's examinations are perceived as 'difficult' or 'tough' to earn specialist status is not able to attract new members. This staff shortage exacerbates the 'triad' balance by an overload of teaching and patient care obligations that leaves little time for scholarly activity. A department perceived as 'soft', that is, being able to fulfill the academic requirements and to obtain a pass in the necessary examinations to earn specialist status relatively easily, attracts its members in healthy number of new recruits who can share the teaching and services commitments, thus giving them more time and resources for research and publications.

Another common grouse is not having our own teaching hospital to do clinical teaching, research and patient care. Both the Ministry of Health and State Health Department have given very good support and cooperation in the use of their staff, patients, resources and facilities. However, access to these still require layers of communication and consent, and in certain ways, restrict what can be done.

Technology Transfer and Consultancy Services at UNIMAS

Technology transfer and consultancy services at UNIMAS are managed by the Centre for Technology Transfer and Consultancy (CTTC). Established on August 23, 1993, its main purpose is to provide a platform for UNIMAS's experts to offer their professional services to the local industries. Such intimate contacts with the industries and local governments not only have managed to fulfill the goal of transferring the technology from the university to the private sectors but also have generated substantial income to the university and its respective consultants.

In general, technology transfer refers to the process of shifting knowledge or technology from a source where it was initially developed to another source or place where the knowledge is applied and exploited for the benefit of others. It is therefore the aspiration of UNIMAS that CTTC plays an active role in making such services available to the public with the objectives of:

:: encouraging and strengthening direct staff participation in research and consultancy works in order to develop their professional experience as well as enhancing their teaching-learning capabilities in their specific areas of expertise;

:: maximising the University's involvement in the nation building through greater cooperation between the university and industries within its resources and means; and

:: optimising the utilisation of University's facilities, academic staff and other resources through transfer of technology, research and development (R&D) and consultancy activities.

Areas of expertise offered by CTTC consultants are:

A	**Arts**	
	Visual Art Performing Arts Design Technology Arts Management and Liberal Studies Applied and Creative Arts Communication Skills	
B	**Biotechnology**	
	Environmental Biotechnology Medical Biotechnology Production Biotechnology Downstream Processing Technology	
C	**Education and Human Resource Development**	
	Education	Cognition and Learning Mathematics and Science Education ICT in Education Educational Management Teacher and Tertiary Education Teaching English as Second Language
	Human Resource Development	Training and Development Organisational Development Cognition and Performance Quality Management Human Resource Development Human Resource Management
	Counseling	Career Psychology Self Development Family and Job Performance Counseling at Workplace Counseling Process Aging Study
	Cognitive Science	Cognitive Psychology Philosophy of Mind Expert Systems Virtual and Augmented Reality Data Mining Machine Learning Human Computer Interface

D	Engineering
	Geotechnical Engineering Environmental Engineering Structural Engineering Optoelectronics and Microprocessor Applications
E	**Environmental Studies**
	Environmental Chemistry Environmental Epidemiology / Public Health Environmental Impact Assessment Remote Sensing and GIS Application
F	**Information Technology**
	System Development Operational Research
G	**Medical Sciences**
	Community Medicine and Occupational Health Neuroscience and Psychological Medicine Child Development and Disorders Urology and Nephrology Pharmacology and Chemical Pathology Medical Entomology and Microbiology Nursing
H	**Resource Science and Management**
	Natural Product Chemistry Taxonomy, Ecology and Physiology Wood Sciences Wildlife Management
I	**Economics and Business Management**
	International Economics and Business Industrial Economic and Services Industry Social Economics

Over the years, CTTC has managed to position itself as one of the key players in the country's consultancy and advisory activities as well as facilitating the University's experts in establishing and developing networks of contacts with clients from the industry; both government and the private sectors. Since its establishment, CTTC has completed over 200 projects with clients ranging from small business enterprises to major clients of multinational organisations. CTTC's experts were instrumental in the initial studies for the construction of the Bakun Hydroelectric Dam and were subsequently involved in its Emergency Response Plan.

Currently, CTTC is in the process of setting up an Intellectual Property Right Unit with the assistance of selected patent agents and the Intellectual Property Cooperation of Malaysia (PHIM). The unit will be responsible to manage and commercialise viable research findings, hence, limit the unscrupulous exploitation of our intellectual products. As Sarawak is a state rich in natural heritage and the diversity of its flora and fauna is world famous, several projects initialised by CTTC's ressearchers have the potential to be commercialised. Examples of products that can be patented are in the methods of dyeing for the production of the *Pua kumbu* (Iban traditional blanket), production of glaze from locally abundant macroalgae, mass-culture of a specific type of alga for health-food, pigment extraction and single cell protein production, and polymerization of lactic acid from hydrolysis of sago starch into bioplastic.

Due to the extensive involvement of the University in the study of peat soil, CTTC researchers were invited to participate in the recent Kick-off Workshop: Federal-State Initiative Pilot Initiative organised by the Ministry of Natural Resource and Environment, Malaysia together with the State Planning Unit of the Chief Minister's Office, Sarawak. This Kick-off Workshop was organised under the Federal-State component of the Multi-lateral Environmental Agreement (MEA) with emphasis on the possibility of implementing a Ramsar Site in Sarawak.

Apart from R&D, CTTC is also active in providing short-term courses for members of local government and private sectors. Academic staffs with expertise in Electronics Engineering are currently involved in a program for Certificate in Electronics Engineering and Advance Certificate in Electronics Engineering for a large multinational company. Other than short courses, CTTC is currently managing four commercial postgraduate programmes leading to a Master of Science Degree in Human Resource Development, Corporate Master in Business Administration, Master in Advance Information Technology, Master of Environmental Science in Land Use and Water Resource Management, and Master in Environmental Management in Development Planning.

*** *Acknowledgement is extended to the Centre for Technology Transfer and Consultancy (CTTC) for the information provided. For further information please access http://www.unimas.my/centre/cttc.*


Appreciating the UNIMAS Vision & Mission

18-20 March 2006



Myren Launching Ceremony

23 March 2006






Counseling: Basic Helping Skills Workshop

23-24 March 2006